

Self-Reporting Cash Tip Income for Income Tax Purposes

Peter Kipp
Julia Mathew
Kayla Sapkota
*Pradeep Sapkota**

I. Introduction

Unlike payroll checks and digital transaction-based compensations, cash income does not have an audit trail; thus, it is no surprise that cash income is underreported for tax purposes. The IRS estimates that less than 40% of tip income received in the form of cash is reported for tax purposes; that accounts for \$9 to \$12 billion in unreported income (Robertson, Quinn, and Carr 2006).¹ Despite the IRS's clear guidance on what constitutes taxable income, the magnitude of underreporting is surprising.² In this article, we explore the determinants of non-reporting of tip income for tax purposes in a subset of the population. Particularly, we explore why college students that work in tip-producing jobs underreport tip income for tax purposes.

Anecdotal evidence and academic research (e.g., Towers and Towers 2020) suggest that decision-making, especially among college-aged students is heavily influenced by social and environmental factors. More recently, online tools and social norms appear to play a significant role in how students act. Recent examples of “viral” videos and their impact on students’ decision-making (and well-being in certain situations) are well documented in the popular press.³ Thus, it is reasonable to expect social influence to have a bearing on the tax reporting habits of students. For example, Bobek, Hageman, and Kelliher (2013) posit that personal and social norms impact tax reporting compliance, indicating that employees who choose to report tip income may do so out of a sense of moral obligation, peer pressure, or even guilt.

Our investigation is based on the theory that social norms can influence tax compliance (Kohlberg 1969; Rest 1986). Kohlberg (1969) presents three hierarchical levels of moral development (pre-conventional, conventional, and principled). We focus on the conventional level, which suggests that individuals form a moral judgment based on the normally accepted conventions of nearby others (i.e., peers). For the purposes of our study, we define tip income as “a gratuity payment made by a customer” where the amount is determined by the customer and is non-compulsory (Karabay and Zanon 1991). To improve our understanding of the determinants of tip income reporting by students, we begin our study by distributing a survey instrument to students in a large public university and collecting anonymous survey responses. We then utilize a multiple regression model to estimate the determinants of students not reporting tip income for tax purposes. We received a total of 595 survey responses, but the final sample for data analysis, following sample attrition, is 134, with the data largely skewed to upperclassmen. Most of the discarded responses were made up of incomplete surveys (189) and from participants that did not have service industry experience (190). We find that workplace culture with regards to others not reporting tip income serves as the main determinant in students not reporting tip income.

¹ The true value of underreported income varies by source. For example, Chotani (2020) suggests 10% of all the individual income underreporting (estimated \$23 billion) is due to tip income underreporting. Interested readers may refer to this article for history of IRS activities related to tip income reporting enforcement.

² §3121 and §3401 provide the definition and requirements related to tip income. The codes can be found here: <https://www.irs.gov/pub/irs-drop/rr-12-18.pdf>. Interested readers can read IRS’s guidance here: <https://www.irs.gov/businesses/small-businesses-self-employed/tip-recordkeeping-and-reporting>. Details on the IRS rules are also provided in the literature review section.

³ Examples of this phenomenon may be found here: <https://www.washingtonpost.com/news/to-your-health/wp/2018/01/13/teens-are-daring-each-other-to-eat-tide-pods-we-dont-need-to-tell-you-thats-a-bad-idea/> and here <https://www.forbes.com/sites/quora/2018/02/05/the-strange-story-of-how-tide-pod-eating-went-viral/?sh=532077964932>.

To supplement our findings, we also conduct semi-structured conversations with students. Based on our conversations, we found that most students did not know about the topic (taxing tip income), yet around 75–80% suggested that tip income is likely taxable under certain conditions. For example, several students thought cash tip income is likely not taxable but credit card tip income is taxable. They also suggested it was common for their peers to not report tip income for tax purposes. Some of the popular reasons for the students and their peers to not report tip income for tax purposes were: no knowledge about the tax rules, tip income amount being immaterial, no knowledge of documentation for tax purposes, time limitation, and others. However, student respondents suggested that if they knew they were required to report tip income, they likely would report at least a portion of the income but they also raised concerns that \$20 per month was too low of a floor given the time it takes to understand the tip reporting rules and process the required forms. They also raised concerns that there was no positive incentive to report tip income.

Our study contributes to the research on decision-making, specifically among college students. We find that workplace-specific social norms and group-think heavily influence decision-making among college students. We also contribute to the research related to tax evasion and moral decision-making. Our findings suggest that consistent with the anecdotal evidence, it is not uncommon for students to not report tip income for tax purposes. Our findings could be of interest to policymakers that are looking to launch an awareness campaign related to self-reporting of tip income.

In a 2018 report, The Treasury Inspector General for Tax Administration suggested that tip income accounts for billions of dollars in revenue shortfall, but the IRS does not have a mechanism in place to enforce tip income reporting and relies on voluntary reporting, likely due to limited availability of financial and human resources (Chotani 2020). Furthermore, the amount of revenue shortfall due to underreporting tip income has been increasing from \$9.45 billion in 1995 to \$18 billion in 2003 (Robertson et al. 2003). While the IRS's position on policing the reporting of tip income is likely to be unchanged, the findings of our study suggest that students are influenced by group-think (rather than moral awareness) when deciding not to report tip income and this could dictate where policymakers can focus their resources. Finally, most students do not appear to understand the rules relevant to tip income reporting. As such, our findings could be of interest to academics that are interested in writing case studies. Based on the enthusiasm among students to discuss taxing of tip income, case studies related to this topic could be of interest to tax and ethics students.

Section II contains the literature review, Section III presents the methodology and results, as well as the findings of semi-structured conversations with students, and Section IV concludes the article.

II. Literature Review

Student Decision-Making

General decision-making processes stem from various influences—social, environmental, and even regulatory influences—but anecdotal evidence shows that post-secondary students seek outside information before making decisions. Towers and Towers (2020) note the increased use of online tools, such as social media sites and online review tools, used by students when gathering information for decision-making.⁴ For example, students desiring to complete postgraduate studies abroad seek information about potential locations via social media according to Galan, Lawley, and Clements's (2015) exploratory study; students use social media platforms, such as Facebook and LinkedIn, to locate information about programs and to evaluate alternatives.

Steffes and Burgee (2009) identified that electronic word-of-mouth channels impact students' decision-making more substantially than word-of-mouth alone, indicating a transition to a reliance on digital sources of information, rather than physical ones. O'Brien (2019) identified that when a decision is made, fewer sources of information lead to that decision than the decision-maker originally intended. Essentially, individuals intend to use multiple sources of information to make their decisions, but they most often arrive at the decisions after less consultation. In summary, students may arrive at decisions after consulting fewer resources, which they often access through electronic means.

⁴ In our setting, online interactions are less likely to influence a given employee's decision to report tip income and we do not specifically explore this topic. We present these examples to show anecdotal evidence on how social norms affect students' decision-making.

Student Reporting

The decision-making strategies of students inform their propensity for reporting. Few studies exist on financial reporting by students, but student reporting habits in other circumstances provide context. The reporting of sexual assault has received much attention in recent years. Mancini, Pickett, Call, and Roche (2016) identified that students perceived mandatory reporting of sexual assault with an air of accountability and are thus more likely to report any happenings. In part, this accountability stems from the expectation that the administration will explore and further any report that is filed, adding consequence to the circumstance. In like manner, students may be more likely to report financial information (i.e., tip income) if they realize the mandatory nature of the filing and identify the repercussions of not doing so.⁵

Likewise, Culiberg, and Mihelič (2019) study students' perceptions of reporting peers' academic dishonesty. Academic dishonesty includes cheating, plagiarism, and using unauthorized notes or tools on assignments, among other elements. Though peer reporting of academic dishonesty is a voluntary action, unlike mandatory tax reporting requirements, what constitutes a student's propensity to report this dishonesty may parallel that of tax reporting. Culiberg and Mihelič (2019) find that when a student perceives the reporting of academic dishonesty as an ethical act, (s)he is more likely to file the report. The strength of ethics in deciding to report reinforces the importance of perceived accountability in the reporting, as exemplified in Mancini et. al (2016). Culiberg and Mihelič (2019) additionally find that awareness of academic dishonesty additionally impacts the propensity to report; if a student witnesses academic dishonesty, (s)he is more likely to label it as an ethical dilemma and report it. In summary, the existence of accountability and the perception of reporting as an ethical act increase students' likelihood to report information.

Tip Income Reporting

Underreporting or not reporting taxes in the United States amounts to an estimated \$600 billion in lost annual tax revenue (Sarin 2021). The IRS (2022) defines tips as "discretionary ... payments determined by a customer that employees receive from customers" which may include "cash tips received directly from customers" or "tips from customers who leave a tip through electronic settlement or payment." Tips are considered taxable and are included in Sections 3121(a) and 3401(a) under the definition of wages (Karabay 1991). An employee who makes more than \$20 in tips each month must report the tips to their employer on a monthly basis, as well as on their individual income tax return (IRS 2022). While a standard form for reporting tips to the employer does not exist, the IRS (2022) recommends using Form 4070A Employee's Daily Record of Tips to maintain a personal record.⁶

To determine the extent to which students report their tip income, Schmidgall and Tarras (1995) conducted a study that asked questions regarding the frequency of tip reporting, instruction on tip reporting, and the amount of tip income reported. Of the 156 responses in their study, 59.6% of the participants completed a tip-reporting form periodically and 34.6% of the participants did not complete a tip-reporting form at all. Only 14.1% of participants responded that they reported all tips. Fifty-two percent of the participants received instructions on tip reporting, and 48% received no instruction. Some of the participants' comments indicated that they were incorrectly instructed in tip reporting. Some participants intentionally underreported their tip income, because they did not agree with the system of reporting tips; a subset of these participants still reported some tip income, because they feared an IRS audit if they did not. Schmidgall and Tarras's (1995) study provides an important psychological perspective on the reporting of tips and introduces the possibility that the majority of tip income is not being accounted for in IRS reporting.

In the years 1985–1990, the IRS estimated that 84% of all tip income, approximately \$500 million, was not reported and that the resulting lost tax revenue from tip income ranked second only to the revenue lost on illegal activities (Zanon 1991). Roughly a decade later, the IRS estimated that more than 60% of tip income, an estimated \$9 billion to 12 billion, was not reported (Robertson, Quinn, and Carr 2006).⁷ Tracking tip income poses a challenge for employers due to its often cash nature. Employees who do not properly report their tip income are subject to a penalty equal to 50% of the FICA taxes on the unreported earnings (Chotani 2020).

⁵ One source through which students would have realized the mandatory nature of tip income reporting is by taking a tax course. In our sample, approximately 28% of the students are accounting students and are more likely to have taken the course, assuming they are upper classmen. Our survey instrument did not specifically ask if the students had taken a tax class.

⁶ Details on cash tips reporting can be found in IRS Publication 531 here: <https://www.irs.gov/publications/p531> and Treasury Regulation §31.6053-4 here: <https://www.law.cornell.edu/cfr/text/26/31.6053-4>.

⁷ We acknowledge that as we move towards a cashless society, the underreporting could decline.

Tax Reporting Compliance

The study of reporting compliance attempts to address an issue that has stood the test of time: how to ensure robust compliance. A brief summary of ideologies surrounding compliance reasoning follows.

Personal and social norms. Bobek, Hageman, and Kelliher (2013) posit that personal and social norms impact tax reporting compliance, indicating that employees who choose to report tip income may do so out of a sense of moral obligation, peer pressure, or even guilt. The sense of moral obligation to report is also reflected in Culiberg and Mihelič's (2019) study on increased reporting by students due to strong ethical obligations.

Strong communication regarding compliance. Farrar and Thorne (2016) find that both thorough explanation and an authoritative tone positively influence compliance. The authoritative tone implies a demand and subsequent accountability surrounding compliance. This finding mirrors Mancini, Pickett, Call, and Roche's (2016) finding that mandatory reporting is more frequently fulfilled when reporters feel accountable to complete an action.

Incongruence of moral behavior and prosocial services. Berger, Guo, and King (2020) find that tip-earning employees within organizations that boast prosocial services are more likely to dishonestly report taxable income due to a perception that the prosocial services provided a "license" or "leeway" to engage in less moral behavior. Essentially, such "good" is accomplished on the job that it is okay to engage in a bit of "bad."

Purpose of This Study

The purpose of this study is to understand why young adults may not report income received through tips in a food-service industry-level job. Specifically, this study seeks to answer the following research questions: 1) Why might students fail to report tip income; 2) How do perceived individual influences (i.e., perceived knowledge of income reporting) and social influences (i.e., peer pressure, social norms) impact reporting of tip income; and 3) How much do young adults know about tax responsibilities regarding reporting tip income? Additionally, the results of this study will bring awareness to the root issues causing the underreporting of tip income and instigate change in the process of reporting tip income.

III. Data, Methodology, and Results

The purpose of our paper is to examine the non-reporting of cash tips for tax purposes among college students. We explore this topic using data collected from a closed-response survey instrument, as well as semi-structured conversations.⁸ This study was approved by the Institutional Review Board at the institution it was administered.

We focus on college students for several reasons. First, college students are considered the "building blocks" of the future, and understanding their reasoning related to tax reporting could help us understand how to create awareness campaigns to increase reporting compliance. These reasons do not have to be limited to tax reporting but could expand to other ethical and moral dilemmas. This situation becomes relevant because college students could hold a decision-making role in the near future. Second, college students form a significant subset of the tip income-earning population but they are different from other subsets because college students likely have had some exposure to tax rules and ethics as part of their course work. Third, because different subsets of the population (e.g., full-time restaurant workers and part-time college students) likely have different thought processes related to reporting, we restrict our study and make inferences on one group, mainly because our research outreach is limited and including the other subsets could induce noise into our study.

Our sample consists of undergraduate college-level students from a large public university who work in the food-service industry. We isolate our sample to those students that receive tip income above \$20 because only employees that earn tip income over \$20 per month are required to report it to the IRS (IRS 2022). Participation was not restricted to specific colleges within the university to allow for variation in responses. In Table 1, we present the sample selection of our survey responses. We received 595 total responses and removed incomplete responses (189), as well as those received from students that did not work in the service industry (190). Of the resultant responses, we removed 82 more responses, because the respondents received less than \$20 in monthly tip income. Our final sample consists of 134 complete responses for data analysis. [See Table 1, pg. 283]

The demographic composition of our sample is skewed to upperclassmen that make up almost 84% of our sample. Freshmen students comprise approximately 8% of the sample, and sophomore students comprise another 8% of the sample.

⁸ We explain the survey variables in detail in the research design section.

Further, accounting majors comprise approximately 28.36% of the sample, 16.42% consist of non-accounting business majors, and non-business majors comprise 55.22%. [See Table 2, pg. 283]

In Table 3, we present the descriptive statistics of our sample. On average, customers spend approximately \$50 on each visit to participants' establishments, which is consistent with anecdotal evidence. On a Likert scale anchored at one to seven, survey respondents suggest their satisfaction level of tip income received is 3.61 with a median of 4, which suggests respondents do not have a clear dissatisfaction or appreciation for the amount of tip income received. When asked about the level of training the respondents had received concerning how to report tip income for income tax purposes, the mean response level was 2.28 and the median was 2. This result suggests that on average respondents feel undertrained for reporting tip income. Displaying posters related to reporting tip income (similar to the Department of Labor posters) could increase the level of awareness in cases like these. The level of knowledge in tip income reporting before starting the current job was also low with an average of 1.88. In regards to our dependent variable, how often students chose not to report tip income for tax purposes, on the 7-point Likert scale, anchored at 1 = Never, 4 = Sometimes, 7 = Frequently, respondents on average selected 2.37 with a median of 1.50. On a similarly structured scale, when asked about others in the workplace reporting tips income, the average was 2.85. More specifically, when asked whether their coworkers *do not* report cash tips as income with 1 = Strongly Disagree and 7 = Strongly Agree, the average for co-workers not reporting was 4.93, suggesting the majority of peers do not report cash tips as income. Finally, agreement with the statement "the culture at my work is to not report cash tips as taxable income" was 4.85 (on the 7-point Likert scale) indicating most participants work in a culture where cash tips are not reported as taxable income. In summary, the descriptive statistics suggest that on average respondents and their colleagues underreport their cash tips income and have a limited understanding of how to report tip income for tax purposes. Additionally, workplace training related to reporting tip income seemed scarce. [See Table 3, pg. 283]

In Table 4, we present the univariate correlation among our variables. Business and accounting majors are positively correlated with knowledge related to tip income reporting. More importantly to our setting, we document that tendency to not report tip income is positively associated with the tendency of others in the workplace to not report, the tendency of others to not report cash income, and the overall culture in the workplace related to the reporting of tip income. Further, the different measures that estimate the workplace culture also seem to be correlated with each other. In a univariate setting, we find some evidence that the tendency to not report tip income is correlated with the overall workplace culture. [See Table 4, pg. 284]

We use the following ordinary least squares regression to estimate the determinants of participants' decision to not report tip income for income tax purposes.

$$NOT_REPORT = \beta_0 + \beta_1 BUSINESS + \beta_2 ACCOUNTING + \beta_3 CLASSIFICATION + \beta_4 AVERAGE_SPEND + \beta_5 TIP_SATISFY + \beta_6 INCOME_TAX_TRAINING + \beta_7 KNOWLEGE_BEFORE + \beta_8 PERCENTAGE_REPORT + \beta_9 OTHER_NOT_REPORT + \beta_{10} NOT_REPORT_CASH + \beta_{11} CULTURE + \varepsilon$$

where the dependent variable *NOT_REPORT* estimates participants' decision not to report tip income on their income taxes measured on a 7-point Likert scale (1 = Never and 7 = Frequently). The first three independent variables (*BUSINESS*, *ACCOUNTING*, *CLASSIFICATION*) capture participants' major and classification (e.g., freshmen). Since business and accounting majors may be more likely to have an awareness of tax reporting and are more likely to take ethics classes as part of their program of study, we expect the coefficients on these two variables to be negative. Similarly, we expect upperclassmen to be negatively associated with the tendency to not report tip income. The next two variables (*AVERAGE_SPEND* and *TIP_SATISFY*) are expected to capture the amount of tip income and the satisfaction of the tip income received. In other words, behavioral theory suggests that the ability to rationalize would be associated with the intention to not report tip income; we expect satisfaction from tip income to be negatively associated with the tendency to not report. The next three variables (*INCOME_TAX_TRAINING*, *KNOWLEGE_BEFORE*, *PERCENTAGE_REPORT*) estimate respondents' pre-training and "on the job" training and awareness related to reporting of tip income. We expect a negative association between training/awareness and the tendency to not report. Finally, the last three independent variables (*OTHER_NOT_REPORT*, *NOT_REPORT_CASH*, *CULTURE*) estimate the workplace culture related to reporting tip income for income tax purposes.⁹ Based on the behavioral theory on the effect of peers on human behavior, we expect to

⁹ We acknowledge that there is not a way for an employee to confirm if the peers report tip income for tax purposes since individual tax returns are confidential. However, for the purposes of our study, only the perception of the given employee would matter, which can be estimated using the survey results.

find a positive association between others in the workplace not reporting and the tendency of the subject to not report their tip income. All variables are defined in Appendix A.

The results of the multivariate regression are presented in Table 5. We find evidence that the workplace culture (i.e., other employees' tendency to not report) is positively associated with the participant not reporting their tip income for tax purposes. In economic terms, we find that holding the other determinants constant, a one-standard-deviation change in other employees' tendency to not report is associated with a 0.404 standard deviation increased likelihood of the responding participant not reporting tip income. Consistently, the beta coefficient for this variable is larger than all the other variables we examine suggesting it has the highest economic effects of the determinants examined in our research.¹⁰ The adjusted R-sq of the model is 26.9%. The overall results suggest that workplace practice is associated with students' non-reporting of tax income. [See Table 5, pg. 284]

Epilogue

To supplement our inferences from the survey responses, we also conducted a semi-structured discussion in an upper-level undergraduate class of approximately 50 students.¹¹ The discussion was kept informal, and the students were told that there was no "wrong" answer to the questions posed. Some of the questions (in no particular order) included a) whether the students thought tip income was considered taxable, b) what they knew about the topic, c) if they currently report tip income for their jobs, and if so, how they know that they are required to report, d) if they do not report tips for their current jobs, why do they not report it, e) if their employers know if and how much they report for tip income, and f) if the employer encouraged them to report tip income.

The students in general were excited to discuss this topic. Many said they had not paused to think of tip income as a taxable source of income. When asked if they thought tips were taxable, around 75–80% of the students suggested that tips may be taxable under certain conditions. For example, some thought cash tips were likely not taxable and stated most people do not report cash tips because there is no way for anyone to prove if they received the cash tip. Around 25% of the students said that they currently report some tip income. Some of the answers were as follows: a) they do not get individual tip income but all the tip income goes into a pot and the pot is then split at the annual Christmas party and the share of the pot money is taken as a Christmas gift (and not reported for tax purposes); b) the credit card tip income is automatically reported as income for tax purposes but cash tip is not; c) the employer sets up a base cash tip income to be reported for tax purposes and that number does not change month-by-month; d) employers sometimes encourage them to report cash income if they are looking to borrow (e.g., car loan) and that reporting high cash income would help them get to a higher tax bracket and the lender would look at them favorably; and e) credit card tips are automatically added and reported for tax purposes but they did not report cash tips to the IRS (e.g., tips collected through food delivery).¹²

Several of the students that participated in this discussion said they did not report all income for tax purposes. When asked if they thought nonreporting was ethical, they suggested that it likely is not, but they were not aware of any rules governing the reporting of tip income for tax purposes. Most students suggested that their peers do not report tip income for tax purposes. They do talk about how much in tip income they earned, but the discussion is not about paying taxes. When asked to share some of the reasons they (or their co-workers) did not report tip income, the students mentioned the following: they have no knowledge about the tax rules, the tip income amount was immaterial, they usually spend the tip income within the same week, they have no knowledge of documentation for tax purposes, they do not pay tax on tip income so that they

¹⁰ The simple correlation presented in Table 4 suggests that our three measures of workplace culture (*OTHER_NOT_REPORT*, *NOT_REPORT_CASH*, *CULTURE*) are correlated with each other. Specially, the correlation coefficient between *NOT_REPORT_CASH* and *CULTURE* is high (0.89). Ex-ante, *Not_Report_Cash* is expected to capture the culture of a team of a few employees that work together, and *Culture* is expected to capture a broader sentiment throughout the workplace. The high correlation could be a function of the size of the workplace. In untabulated analysis, we confirm that there is no concern for multicollinearity because none of the VIFs exceed 10 (Greene 2003). Furthermore, if we remove *OTHER_NOT_REPORT* and *NOT_REPORT_CASH* variables from the model, we find that *CULTURE* loads significantly ($p < 0.01$).

¹¹ Because this was a generalized classroom discussions and no individual responses were collected, we did not seek IRB approval for this particular section of the paper.

¹² IRS rule dictates that tip income from pooling (e.g., tip pot) should also be reported for tax purposes and is limited to the tip income that is received and retained. Details can be found at Pub. 531 Reporting Tip Income. Link to the publication can be found here: <https://www.irs.gov/publications/p531>.

can save money for their next big purchase, the tip money is already taxed, and they are lazy or believe that voluntary reporting is a waste of time.

In the final set of discussions, students suggested that if they knew they were required to report tip income, they likely would report all or at least a portion of the income. They said the \$20 per month reporting floor was too low. They also said there was no positive incentive to report tip income and felt that IRS might not be too keen to police tip income reporting.

When asked what the policymakers could do to encourage more taxpayers to report tip income, the students hesitated. They knew that if regulators gave credits or deductions to the taxpayers that reported tip income, it would not solve the issue. For example, if the IRS gave too many credits or deductions then it would not solve the IRS's objective of raising more taxes and if the IRS gave too few credits or deductions, then taxpayers would still end up losing money in taxes if they chose to report. They suggested that the policymakers could initiate an indirect benefit plan. For example, voluntarily self-reported income would count as income for two years when calculating earned income credit. Another example that was presented was that taxpayers that report voluntary income (e.g., tip income) would qualify for a better health insurance package from the health insurance exchange. There was also some agreement that if employers were required to post signs in workplaces related to taxing of tip income (similar to workplace safety signs such as ones related to washing hands), it may help educate the employees regarding the tax rules of cash income.

IV. Conclusion

In this article, we explore tip income reporting practices for income tax purposes among college students. Prior studies document that less than 40% of tip income is reported for tax purposes and that this accounts for approximately \$10-\$20B in budget shortfall (Roberson et al. 2006; Chotani 2020). We find that consistent with the anecdotal evidence and research findings of human behavior (e.g., Towers and Towers 2020; Kohlberg 1969), students' non-reporting of tip income is influenced by social and environmental factors, and they are swayed by group-think. To supplement our survey study, findings from semi-structured conversations suggest that most students currently do not report tip income but that mainly stems from a lack of knowledge. They also suggested that if they or their peers knew about the requirements and ramifications of reporting tip income, their behavior may be altered. Our study contributes to policy discussions related to voluntary reporting for income tax purposes.

There are several limitations to our study. First, our study was conducted at a single large public university, which may preclude generalizability. We encourage future studies to focus on a more comprehensive sample that ranges from a wider setting (e.g., different geographical locations or institutional sizes). Second, our study focuses on college students that have tip income-producing part-time jobs. We acknowledge that some workers have full-time jobs in which tips make up all or a major component of their compensation, and our study is not intended to make inferences about that subgroup. Third, our study primarily explores the role of the work environment (e.g., peer behavior) as the main factor for tip underreporting. Future studies may explore other influencing factors. Finally, while our study contributes to a policy discussion, additional exploration of the topic is necessary to suggest policy implications.

Appendix A: Variable Definitions

Business = dichotomous indicator variable (1 = Business major declared, 0 = non-Business major declared).

Accounting = dichotomous indicator variable (1 = Accounting major declared, 0 = non-Accounting major declared).

Classification = Classification based on hours completed. 1 = Freshman, 2 = Sophomore, 3 = Junior, Senior.

Average_Spend = Approximate amount a customer spends on a single visit to the respondent's establishment, rounded to nearest dollar.

Tip_Satisfy = How satisfied respondents are with their tips received from any one customer following a visit (7-point Likert scale anchored at 1 = Very unsatisfied, 4 = Neither satisfied nor unsatisfied, 7 = Very satisfied).

Knowledge_Before = Self-assessed knowledge on how to report tip income before any formal training received (7-point Likert scale anchored at 1 = Very unknowledgeable, 4 = Somewhat knowledgeable, 7 = Very knowledgeable).

Income_Tax_Training = Response to the question "How much training have you received on how to report your tip income on your income taxes?" (7-point Likert scale anchored at 1 = No training, 4 = Some training, 7 = Extensive training).

Percentage_Report = Response to the question "Did your training state that you had to report all of your tip income, a percentage of your sales, or to not report tips at all?" (1 = Report all of my tip income, 2 = A percentage of sales, 3 = Not report tips at all).

Not_Report = Indication of how often respondents chose not to report tip income on their income taxes due to social or peer pressure (7-point Likert scale anchored at 1 = Never, 4 = Sometimes, 7 = Frequently).

Other_Not_Report = Indication of how often someone the respondent works with chose not to report tip income on their income taxes due to social or peer pressure (7-point Likert scale anchored at 1 = Never, 4 = Sometimes, 7 = Frequently).

Not_Report_Cash = Agreement with the statement "People that I work with often do not report cash tips on their tax returns." (7-point Likert scale anchored at 1 = Strongly disagree, 4 = Neither agree nor disagree, 7 = Strongly agree).

Culture = Agreement with the statement "The culture at my work is to not report cash tips as taxable income." (7-point Likert scale anchored at 1 = Strongly disagree, 4 = Neither agree nor disagree, 7 = Strongly agree).

Appendix B: Survey Instrument

Question 1: Do you currently work, or have you worked in a service level industry since graduating high school?

Question Type: Multiple Choice:

A: Yes

B: No

Question 2: Do you receive tips on a regular basis?

Question Type: Multiple Choice:

A: Yes

B: No

Question 3: Do your tips exceed \$20 in any given month?

Question Type: Multiple Choice:

A: Yes

B: No

Question 4: Approximately how much does a customer spend during one visit to your establishment? Please enter a figure to the nearest whole dollar.

Question Type: Multiple Choice w/Text Entry:

A: Dollar Amount per visit:

B: Unsure

Question 5: How satisfied are you with the amount of tips received from any one customer following their visit?

Question Type: Likert Scale: 1–7

1 being Satisfied, 4 being Neither satisfied nor unsatisfied, and 7 being Very satisfied.

Question 6: Have you ever filed your federal income taxes?

Question Type: Multiple Choice:

A: Yes

B: No

Question 7: How familiar are you with the process to report tip income on your income taxes?

Question Type: Likert Scale: 1–7

1 being Not at all familiar, 4 being Somewhat familiar, and 7 being Very familiar.

Question 8: How much tax training have you received on how to report your tip income on your income taxes?

Question Type: Likert Scale: 1–7

1 being No training, 4 being Some training, and 7 being Extensive training.

Question 9: Did your training come in the form of your past or current job, classes taken in college, your parents/family, or other? Please select all that apply.

Question Type: Checkboxes:

A: Job

B: College

C: Parents/Family

D: No training

E: Other

Question 10: How would you assess your knowledge on how to report tip income on your income taxes BEFORE any training you may have received?

Question Type: Likert Scale: 1–7

1 being Very unknowledgeable, 4 being Somewhat knowledgeable, and 7 being Very knowledgeable.

Question 11: My employer has instructed/trained me to report a percentage of my tip income on my income taxes.

Question Type: Likert Scale: 1–7

1 being Strongly disagree, 4 being Neither agree nor disagree, 7 being Strongly agree.

Question 12: Did your training state that you had to report all of your tip income, a percentage of your sales, or to not report tips at all?

Question Type: Multiple Choice:

A: Report all of my tip income

B: A percentage of my sales

C: Not report tips at all

D: Other

Question 13: What training, if any, has your employer provided for reporting tip income as taxable income? Please check all that apply.

Question Type: Checkboxes:

A: Training video(s)

B: Informing me about Form 4137 “Social Security and Medicare Tax on Unreported Tip Income”

C: Informing me about Form 4070A “Employee’s Daily Record of Tips”

D: Offered to help me complete my Income Tax Return

E: Directed me to resources that aid in filing income tax returns

F: Other

G: None of the above

Question 14: How often have you ever chosen to not report your tip income on your income taxes due to social or peer pressure?

Question Type: Likert Scale: 1–7

1 being Never, 4 being Sometimes, 7 being Frequently

Question 15: How often has someone you work with chosen to not report your tip income on your income taxes due to social or peer pressure?

Question Type: Likert Scale: 1–7

1 being Never, 4 being Sometimes, 7 being Frequently

Question 16: People that I work with often do not report cash tips on their tax returns.

Question Type: Likert Scale: 1–7

1 being Strongly disagree, 4 being Neither agree nor disagree, 7 being Strongly agree

Question 17: The culture at my work is to not report cash tips as taxable income.

Question Type: Likert Scale: 1–7

1 being Strongly disagree, 4 being Neither agree nor disagree, 7 being Strongly agree

Question 18: My colleagues at work feel that they are not tipped enough to report cash tips as taxable income.

Question Type: Likert Scale: 1–7

1 being Strongly disagree, 4 being Neither agree nor disagree, 7 being Strongly agree

Question 19: Those who report tip income as taxable income are treated as “outsiders” at work.

Question Type: Likert Scale: 1–7

1 being Strongly disagree, 4 being Neither agree nor disagree, 7 being Strongly agree

Question 20: How many years have you worked in the service industry? Please enter your response as a whole number.

Question Type: Text Entry:

Question 21: Are you a freshman, sophomore, junior, senior, or graduate student?

Question Type: Multiple Choice:

A: Freshman

B: Sophomore

C: Junior

D: Senior

E: Graduate student

F: Other

Question 22: What is your current major (if Undeclared please enter “Undeclared”)?

Question Type: Text Entry:

Question 23: How many post-secondary tax classes have you taken (if none, please enter 0)?

Text Entry:

Question 24: Did you switch from a different major?

Question Type: Multiple Choice:

A: Yes

B: No

Question 25: If your answer was “Yes” from the previous question, what was your previous major?

Question Type: Text Entry:

Appendix C: Tables

Table 1: Sample Selection

Sample Attrition	Number of Participants
Total participants who accessed the Qualtrics survey	595
Less: Participants who failed to finish the Qualtrics survey	(189)
Less: Participants who do not have service industry experience	(190)
Less: Participants who report < \$20 in tip income	(82)
Total participants for data analysis	134

Table 2: Participant Demographics

Participant Characteristic	Number of Participants
Classification:	
<i>Freshman</i>	11
<i>Sophomore</i>	11
<i>Junior</i>	53
<i>Senior</i>	59
Major:	
<i>Accounting</i>	38
<i>Business (not Accounting)</i>	22
<i>Not Business</i>	74

Table 3: Descriptive Statistics

Variable	N	Mean	Median	Q1	Q3	Std Dev
<i>Business</i>	134	0.45	0.00	0.00	1.00	0.50
<i>Accounting</i>	134	0.28	0.00	0.00	1.00	0.45
<i>Classification</i>	134	3.19	3.00	3.00	4.00	0.91
<i>Average Spend</i>	99	49.89	30.00	15.00	55.00	103.88
<i>Tip Satisfaction</i>	134	3.61	4.00	2.00	5.00	2.03
<i>Income Tax Training</i>	134	2.28	2.00	1.00	3.00	1.52
<i>Knowledge_Before</i>	134	1.88	1.00	1.00	2.00	1.27
<i>How to Report</i>	134	1.85	2.00	1.00	3.00	0.90
<i>Not_Report</i>	134	2.37	1.50	1.00	4.00	1.80
<i>Other_Not_Report</i>	134	2.85	2.00	1.00	4.00	2.10
<i>Not Report Cash</i>	134	4.93	5.00	4.00	7.00	1.96
<i>Culture</i>	134	4.85	5.00	4.00	7.00	1.98

Table 3 presents the descriptive statistics for our sample. All variables are defined in Appendix A.

Table 4: Simple Correlation Table

Variable	1	2	3	4	5	6	7	8	9	10	11
1 Business											
2 Accounting	0.70										
3 Classification	0.24	0.25									
4 Average_Spend	-0.42	-0.07	-0.04								
5 Tip_Satisfy	0.14	0.10	0.16	0.12							
6 Income_Tax_Training	0.12	0.04	0.04	0.24	0.70						
7 Knowledge_Before	0.24	0.30	0.17	-0.01	0.44	0.38					
8 Percentage_Report	0.08	0.03	-0.04	-0.15	-0.37	-0.38	-0.06				
9 Not_Report	0.12	0.07	0.12	0.01	0.14	0.09	0.12	-0.06			
10 Other_Not_Report	0.09	-0.03	0.06	0.23	0.11	0.10	0.06	-0.08	0.54		
11 Not_Report_Cash	0.02	-0.04	-0.03	0.09	-0.07	-0.01	0.02	0.07	0.31	0.38	
12 Culture	-0.04	-0.07	-0.09	0.09	-0.17	-0.09	-0.04	0.13	0.28	0.31	0.89

Table 4 presents the Pearson Correlation coefficients of all the variables in our main sample of 134 survey respondents. Bolded items are significantly correlated at a 10% level (two-tailed).

Table 5: Multiple Regression

Parameter	Estimate	Std. Error	Std. Beta	t-stat
CONSTANT	-0.30	0.77		-0.39
BUSINESS	0.06	0.39	0.02	0.15
ACCOUNTING	0.20	0.43	0.05	0.45
CLASSIFICATION	0.14	0.16	0.07	0.88
LOG_AVERAGE_SPEND	0.03	0.19	0.01	0.18
TIP_SATISFY	0.08	0.10	0.09	0.83
INCOME_TAX_TRAINING	-0.04	0.13	-0.03	-0.27
KNOWLEDGE_BEFORE	0.05	0.13	0.04	0.40
PERCENTAGE_REPORT	-0.03	0.17	-0.02	-0.18
OTHER_NOT_REPORT	0.40	0.07	0.47	5.73 ***
NOT_REPORT_CASH	-0.01	0.16	-0.01	-0.04
CULTURE	0.15	0.15	0.17	1.00

N 134

Adj R-Sq 0.269

Table 5 presents the regression results for the determinants for non-reporting of tip income for tax purposes for 134 survey respondents. All variables are defined in Appendix A. *, **, *** indicate two-tailed significance at the 10%, 5%, and 1% levels, respectively.

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